



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,362	04/14/2005	Antonio Giangrasso	85268	6969

22242 7590 01/19/2007
FITCH EVEN TABIN AND FLANNERY
120 SOUTH LA SALLE STREET
SUITE 1600
CHICAGO, IL 60603-3406

EXAMINER

DESAI, ANISH P

ART UNIT	PAPER NUMBER
----------	--------------

1771

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,362	GIANGRASSO, ANTONIO	
	Examiner	Art Unit	
	Anish Desai	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-16 is/are pending in the application.
- 4a) Of the above claim(s) 5,6,9 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,8 and 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/07/06</u> | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1771

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-4, 8, 11-16, drawn to plastic molded body.

Group II, claim(s) 5-6, 9-10, drawn to a method for producing the plastic molded body.

The inventions listed as Groups I,II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature of claims 1 and 5 is obvious in view of David (US 3,048,537). Pall discloses porous articles of polyethylene polymers that are formed by sintering low-density polyethylene particles (column 1, lines 56-60) wherein the low-density polyethylene has density of 0.91 to 0.93 (g/cm³) (column 3, line 39). As such the common features of the claims sets do not meet the definition of common technical feature.

During a telephone conversation with Mr. James Krueger on 12/20/06 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-4, 8, and 11-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 5-6 and 9-10 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

2. Claims 12 and 13 are objected to because of the following informalities: Claims 12 and 13 recite "The pre-filtered material", it should be changed to "The pre-filter material". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-4, 8, and 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites "irregularly sintered plastic granulate particles", which is grammatically ambiguous. It is unclear as to what does applicant mean by "irregularly sintered". Does it mean that there are irregular passageways, irregular particle size, or sintering is irregular? For purpose of the examination, the examiner is interpreting "irregularly sintered plastic granulate particles" as plastic granulate particles when sintered creates tortuous path (turning body) in the plastic molded body comprising such particles.

Art Unit: 1771

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 8, and 11-16 rejected under 35 U.S.C. 103(a) as being unpatentable over David (US 3,048,537) in view of Anderson et al. (US 5,548,960) and Sternberg (US 4,184,963).

Regarding claim 1, David teaches a process for preparing porous articles of manufacture of polyethylene (column 1, lines 10-14). The porous articles of David can be prepared from sintering low-density polyethylene particles (column 1, lines 57-60). Additionally David discloses porous articles such as a filter (Figure 4). Moreover, the density of low-density polyethylene of David's invention is 0.91 to 0.93 g/cm³, which reads on sintered plastic granulate particles having a density of 0.6 to 1.2 g/cm³. As to the limitation of "granulate particles having a size in the range from 2 mm to 10 mm", David discloses that porous articles can be formed from resins of any particle size. According to David, the particle size is not critical, but the larger the particle size the greater the pore size of the article obtained, and correspondingly, the greater the permeability (column 3, lines 64-67). Although David does not explicitly teach the particle size of 2 mm to 10 mm, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the particle size of 2 mm to 10 mm, since it has been held that discovering an optimum value of a result effective

Art Unit: 1771

variable involves only routine skill in the art (*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) and determining the workable range of the generally disclosed variable is likewise involves only a routine skill *In re Aller*, 105 USPQ 233.

With respect to claim 1, David is silent as to teaching of irregularities of sintered plastic granulate particles and bulk density of the plastic molded body of 150 to 250 g/l (0.15 to 0.25 g/cm³). However, Anderson teaches an extruder and methods for converting pressurized liquid CO₂ feed into dry ice pellets of predetermined shape and size. The extruder of Anderson achieves increased in production rate of dry ice pellets utilizing sintered plastic filter media which provides enhanced removal of CO₂ gas from the CO₂ snow (dry ice) (abstract). The sintered plastic filter media of Anderson reads on the plastic molded body of claim 1. Further, Anderson teaches that the porous plastic filter media comprises an irregular and nonuniform distribution of plastic particles. According to Anderson, this filter media provides a plurality of tortuous and irregularly shaped air passages running there through for purposes of venting CO₂ gas from CO₂ snow. As a result, the production capacity is significantly increased (column 8, lines 16-25). Additionally, Anderson teaches that a single polymeric constituent of varying particle size and shape may be used as well as multiple polymer beds which incorporate two or more distinct polymeric constituents capable of providing a tortuous and irregularly shaped path through the resulting structure (i.e. filter) (column 8, lines 26-35). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to a filter of David with low-density polyethylene particles having varying shape as taught by Anderson, motivated by the desire to create tortuous

and irregularly shaped path through the filter such that the filtration capability of the filter can be enhanced.

With respect to claims 1 and 2, David as modified by Anderson is silent as to teaching of bulk density of the plastic molded body of 150 to 250 g/l (0.15 to 0.25 g/cm³) and 150 to 200 g/l (0.15 to 0.20 g/cm³). However, Sternberg teaches an immersible molecular filter that is formed from a porous polymeric body (abstract and column 1 lines 60-68). The porous body of Sternberg is formed of sintered polymer such as polyethylene and has a bulk density of less than 0.5 g/cm³ such as from about 0.25 to about 0.35 g/cm³ (column 5, lines 42-43), so that it is very light in weight (column 1, lines 65-67). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the bulk density of the porous filter of David in the range as taught by Sternberg, motivated by the desire to obtain a light weight but effective filter.

Regarding claim 3, as previously noted David teaches polyethylene particles. With respect to claims 4 and 13, although David as modified by Anderson and Sternberg does not teach plastic granulate particles are lenticular, since David as modified by Anderson and Sternberg teaches the same subject matter as claimed by the applicant (filter), in absence of unexpected results, choosing a particular shape for particles such that it can be used as a filter involves only a routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the lenticular plastic granulate particles of low-density polyethylene in the porous filter of David, motivated by the desire to create a porous sintered filter.

Art Unit: 1771

With respect to claims 8 and 14-16, David teaches that a layer of polyethylene particles is spread upon one of the confining surface in the desired height per unit area of surface and sintered (column 2 lines 71-72 and column 3 lines 20). With respect to claims 11 and 12, as previously noted David teaches porous sintered filter formed of sintering low-density polyethylene particles.

5. Claims 4, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over David (US 3,048,537) in view of Anderson et al. (US 5,548,960) and Sternberg (US 4,184,963) as applied to claims 1 and 11 above, and further in view of Derwent Abstract of DD137026A.

The invention of David is previously disclosed and is applicable as previously noted to claim 16. David is silent as to teaching of plastic granulate particles are lenticular. However, DD137026A teaches box or bottle shaped cartridge for desilverizing of photographic baths is filled with open pore high active partially sintered particles. The particles are spherical, lenticular, and cylindrical, in form of platelets and/or discs. These particles are packaged inside the cartridge in such as way that their spacing from one another regulates the rate of flow of the bath liquor through the cartridge, same effect as the sintered body claimed instantly. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose lenticular low-density polyethylene particles in the invention of David, motivated by the desire to regular the rate of flow of material to be filtered.

Art Unit: 1771

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Desai whose telephone number is 571-272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

APD



TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700